

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
Paul A. Crawford

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For: PUP JOINT WITH INTEGRAL WING
NUT RETENTION SHOULDER

EXPRESS MAIL MAILING LABEL
NUMBER EL 780052207 US
DATE OF DEPOSIT November 9, 2001

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

Sir:

Please amend this application as follows:

In the Claims

Please amend the claims as follows:

1. (Amended) A pup joint comprising:

a length of pipe having an outside diameter;

a female sub connected to a first end of the length of pipe, the female sub including a
conical sealing surface, an outer surface formed adjacent the conical sealing
surface and external threads formed on the outer surface;

a male sub connected to the distal end of the length of pipe, the male sub including a section having an outside diameter greater than the outside diameter of the length of pipe, the male sub also including a forward shoulder extending radially outwardly therefrom and a spherical sealing surface adjacent the forward shoulder which is adapted to mate with and seal against the conical sealing surface of another such pup joint;

a nut having an internal surface, internal threads formed on the internal surface and a rearward shoulder extending radially inwardly from the internal surface;

one or more retainer segments positioned between the rearward shoulder of the nut and the forward shoulder of the male sub for restricting axial movement of the nut relative to the male sub in a first direction;

a retainer ring positioned in a corresponding groove formed in the retainer segments and having an outer diameter which is greater than the diameter of the rearward shoulder to thereby maintain the nut positioned around the retainer segments; and

a retention shoulder extending radially outwardly from the male sub positioned rearwardly of the forward shoulder, the retention shoulder comprising an outside diameter greater than the inside diameter of the retainer segments;

whereby the retention shoulder restricts axial movement of the nut and the retainer segments relative to the male sub in a direction opposite the first direction.

2. (Amended) The pup joint of claim 1, wherein the male sub and the female sub are formed integral with the length of pipe.

3. (Amended) The pup joint of claim 1, wherein the length of pipe, the male sub and the female sub are constructed of a single forging and the retention shoulder is machined into the male sub.

Please add the following claims:

4. The pup joint of claim 1, wherein the male sub is threaded onto the distal end of the length of pipe, and the female sub is threaded onto the first end of the length of pipe.

5. A pup joint comprising:

a length of pipe having an outside diameter;

a female sub connected to a first end of the length of pipe, the female sub including a conical sealing surface, an outer surface formed adjacent the conical sealing surface and external threads formed on the outer surface;

a male sub connected to the distal end of the length of pipe, the male sub including a forward shoulder extending radially outwardly therefrom and a spherical sealing surface adjacent the forward shoulder which is adapted to mate with and seal against the conical sealing surface of another such pup joint;

a nut having an internal surface, internal threads formed on the internal surface and a rearward shoulder extending radially inwardly from the internal surface;

one or more retainer segments positioned between the rearward shoulder of the nut and the forward shoulder of the male sub for restricting axial movement of the nut relative to the male sub in a first direction, the one or more retainer segments having an inside diameter greater than the outside diameter of the length of pipe;

a retainer ring positioned in a corresponding groove formed in the retainer segments and having an outer diameter which is greater than the diameter of the rearward shoulder to thereby maintain the nut positioned around the retainer segments; and

a retention shoulder extending radially outwardly from the male sub rearwardly of the forward shoulder, the retention shoulder comprising an outside diameter greater than the inside diameter of the retainer segments;
whereby the retention shoulder restricts axial movement of the nut and the retainer segments relative to the male sub in a direction opposite the first direction.

6. The pup joint of claim 5, wherein the male sub and the female sub are formed integral with the length of pipe.

7. The pup joint of claim 6, wherein the length of pipe, the male sub and the female sub are constructed of a single forging and the retention shoulder is machined into the male sub.

8. The pup joint of claim 5, wherein the male sub is threaded onto the distal end of the length of pipe, and the female sub is threaded onto the first end of the length of pipe.

9. A pup joint comprising:

a length of pipe having an outside diameter;

a female sub connected to a first end of the length of pipe, the female sub including a conical sealing surface, an outer surface formed adjacent the conical sealing surface and external threads formed on the outer surface;

a male sub connected to the distal end of the length of pipe, the male sub including a section having an outside diameter greater than the outside diameter of the length of pipe, the male sub also including a forward shoulder extending radially outwardly therefrom and a spherical sealing surface adjacent the forward shoulder which is adapted to mate with and seal against the conical sealing surface of another such pup joint;

a nut having an internal surface, internal threads formed on the internal surface and a rearward shoulder extending radially inwardly from the internal surface;

one or more retainer segments positioned between the rearward shoulder of the nut and the forward shoulder of the male sub for restricting axial movement of the nut relative to the male sub in a first direction;

a retainer ring positioned in a corresponding groove formed in the retainer segments and having an outer diameter which is greater than the diameter of the rearward shoulder to thereby maintain the nut positioned around the retainer segments; and

a retention shoulder extending radially outwardly from the section of the male sub, the retention shoulder positioned rearwardly of the forward shoulder, the retention shoulder comprising an outside diameter greater than the inside diameter of the retainer segments, the outside diameter of the retention shoulder also being greater than both the outside diameter of the length of pipe and the outside diameter of the section of the male sub;

whereby the retention shoulder restricts axial movement of the nut and the retainer segments relative to the male sub in a direction opposite the first direction.

10. The pup joint of claim 9, wherein the male sub and the female sub are formed integral with
the length of pipe.

11. The pup joint of claim 10, wherein the length of pipe, the male sub and the female sub are constructed of a single forging and the retention shoulder is machined into the male sub.

12. The pup joint of claim 9, wherein the male sub is threaded onto the distal end of the length of pipe, and the female sub is threaded onto the first end of the length of pipe.

In the Drawings

Please enter the amendment shown in red to FIG. 1.

REMARKS

The active claims in this case are claims 1 – 3, as issued in U.S. Patent No. 5,791,693, granted on August 11, 1998. These claims have been amended as set forth above. Claims 4-12 are added herein. Pursuant to 37 C.F.R. § 1.173(c), a separate paper reiterating the status of the amended and added claims in the present reissue application, and containing an explanation of the support in the disclosure of the original patent for the changes to the claims is filed herewith.

The amendments to FIG. 1 are shown in red. One of the changes represents a retainer ring. The other changes connect the lead lines from element numbers 30 and 32 with their correct locations. An exploded view of the portion of FIG. 1 that is sought to be amended is shown for the convenience of the Examiner; however, it will be understood that Applicant does not wish to alter the size of FIG. 1. Support for the amendment to FIG. 1 adding the retainer ring is found in the originally-filed FIG. 1, which depicts the retainer ring that was inadvertently left out of the formal drawings submitted on April 18, 1998. Support for revising the lead line from element number 30 to correctly point to the rearward shoulder of nut 24 may be found, for example, by comparing the revision to the feature of FIG. 3 to which element number 138 points (see also col. 2, line 66 – col. 3, line 7). Support for revising the lead line from element number 32 to correctly point to the forward shoulder of male sub 14 may be found, for example, by comparing the revision to the feature of FIG. 3 to which element number 136 points (see also col. 2, line 66 – col. 3, line 7).

It is believed that no fee is due; however, should any fees under 37 C.F.R. §§ 1.16 to 1.21 be required for any reason, the Commissioner is authorized to deduct said fees from Fulbright & Jaworski Deposit Account No. 50-1212/10104805/MTG.

Respectfully submitted,



Mark T. Garrett
Reg. No. 44,699
Attorney for Applicant

FULBRIGHT & JAWORSKI
600 Congress Avenue, Suite 2400
Austin, Texas 78701
Telephone: (512) 536-3031
Facsimile: (512) 536-4598
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